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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/496,932	02/02/2000	Tamotsu Suzuki	81876.0002	6863

7590 05/23/2002

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EXAMINER

TRAN, PABLO N

ART UNIT PAPER NUMBER

2684

DATE MAILED: 05/23/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/496,932

Applicant(s)

SUZUKI ET AL.

Examiner

Pablo N Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3 rejected under 35 U.S.C. 103(a) as being unpatentable over *Koga et al.* (5,970,390) in view of *Koike* (6,246,864).

As per claim 1, *Koga et al.* disclosed a frequency modulating (FM) transmitter (fig. 1/no. 40) comprising a reference frequency generator (where it is clear that a PLL inherently comprises a reference frequency generator, although not shown), a frequency divider for frequency dividing said reference frequency (see col. 3/ln. 42-43), a stereo modulation circuit (see fig. 1/no. 45) for frequency a right and a left audio signals (see output of no. 45) by one output of said reference frequency divider to supply the resultant signals stereo modulated signals as FM signals (see col. 3/ln. 42-43), an oscillator circuit for generating carrier waves to transmit said FM signals received from said stereo modulation circuit (see VCO section in no. 45, col. 3/ln. 39-42), a PLL frequency synthesizer (col. 3/ln. 38) which has a phase comparator (where it is clear that a PLL inherently comprises a phase comparator, although not shown). More specifically, *Koga et al.* disclosed a PLL having frequency divider and VCO for

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providing oscillating signals for the modulation circuit to generate FM signal but fails to show the details of PLL having program counter/divider and phase comparator arrangement. However, it is common knowledge that a PLL should have a phase comparator to compare outputs of counter/divider to provide a control signal for controlling said oscillator circuit. As evidence by *Koike*, *Koike* disclosed a PLL with a phase comparator (see fig. 5/no. 26) for comparing outputs of the program counter (see fig. 5/no. 32) and the reference divider (see fig. 5/no. 12). Since, both references disclosed FM transmitter employing PLL; therefore, it would have been obvious to one of ordinary skill in the art to apply such PLL arrangement with phase comparator that compared outputs of the program counter and the reference divider of *Koike* to the PLL arrangement of *Koga et al.* to provide accurate oscillation signals.

As per claim 3, *Koga et al.* do not explicitly disclose the frequency of said reference frequency generator is set to either one of 7.6MHZ, an integral multiple of 7.6Mhz, or integer infractions of 7.6MHZ. However, it is common knowledge in the art that the reference frequency generator is set to either one of 7.6MHZ, 19khz, or 38khz are purely dependent on the frequency requirement of the particular transmitter availability of reference frequency generator. Furthermore, Applicant admission states that any type of reference frequency generator can be chosen to be 7.6 Mhz or an integral multiple or fractional frequencies of 7.6 Mhz (see specification, page 5, lines 5-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the reference frequency generator is set to either one of 7.6MHZ, 19khz, or 38khz to the reference generator of *Koga et al.* in order to expand

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the communication system application to have better flexibility or more versatility so that various reference frequency generators can be used for the FM transmitter systems.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Koga et al.* (5,970,390) in view of *Koike* (6,246,864) and further in view of *Meador et al.* (5,953,640).

As per claim 2, *Koga et al.* in view of *Koike* disclosed externally controllable for IC modulation such as frequency division ratios of said program counter (see *Koga et al.*, col. 4/ln. 26-29, see *Koike*, col. 2/ln. 38-45) but not the modulation level of said stereo modulation circuit. However, the modulator having modulation level adjusted is well known in the art as shown by *Meador et al.* (col. 3/ln. 57-col. 4/ln. 22). Since, both *Koga et al.* and *Koike* teach the externally controller for the IC modulator, it would have been obvious to one of ordinary skill in the art to apply modulation level adjusted as disclosed in *Meador et al.* to the externally controllable for IC modulation to the combination of *Koga et al.* and *Koike* for optimum transmission output.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wittrock (4,823,390), Takeda et al. (5,406,631), Alstatt (5,771,441), Ono (JP408186445A), Suzuki (JP361161041A), and Saito et al. (JP410013370A) disclose FM stereo modulator system.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (703)308-7941. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

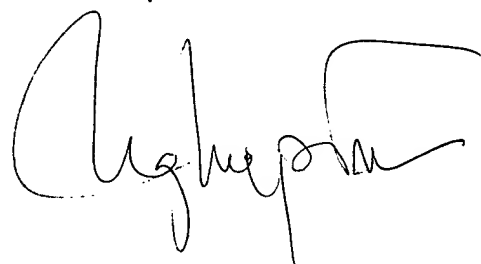
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

May 18, 2002

**PABLO N. TRAN
PATENT EXAMINER**

A handwritten signature in black ink, appearing to read 'Pablo N. Tran', is written over the printed name and title.